

THE CERES S'COOL PROJECT

STUDENTS' CLOUD OBSERVATIONS ON-LINE

Lin Chambers, Kay Costulis, and David Young
NASA LaRC, Hampton, VA

Tina Rogerson (ASDC), Joyce Fischer,
Susan Moore, and Roberto Sepulveda
SAIC

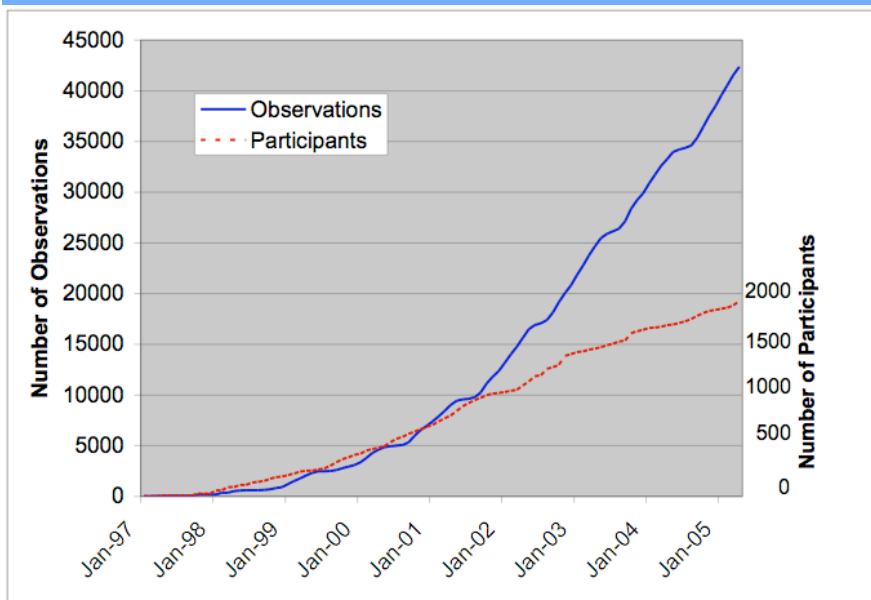


(NASA Web Site Privacy Statement)
Last Updated: Fri Mar 21 2003 13:42:08
Web Curator: P. Kay Costulis (p.k.costulis@larc.nasa.gov)
Responsible NASA Official: Lin H. Chambers, Director, Students' Cloud Observations On-Line Project

CERES Science Team Meeting
Princeton, NJ
May 2005

What is S'COOL?

- Education and Public Outreach arm of CERES
- A simple way to involve K-12 students in real science
- A source of validation data for the CERES cloud data



Impact Measures

- 70 requests for S'COOL materials in 1st Q 2005

•States “Top Five”

•PA	20%
•VA	10%
•NH	7%
•PR	7%
•CA	5%

•States “Bottom Five”

•Virgin Islands	9
•Vermont	7
•Guam	6
•Delaware	3
•Northern Marianas	0

•Web Visits “Top Five”

- Mexico
- Canada
- France
- Australia
- UK

•Observations “Top Five”

•US	63%
•France	9%
•Colombia	4%
•Croatia	3%
•Argentina	3%

Impact Measures (cont'd)

Database of observations - as of April 2005

- Record number of observations each month since last STM!

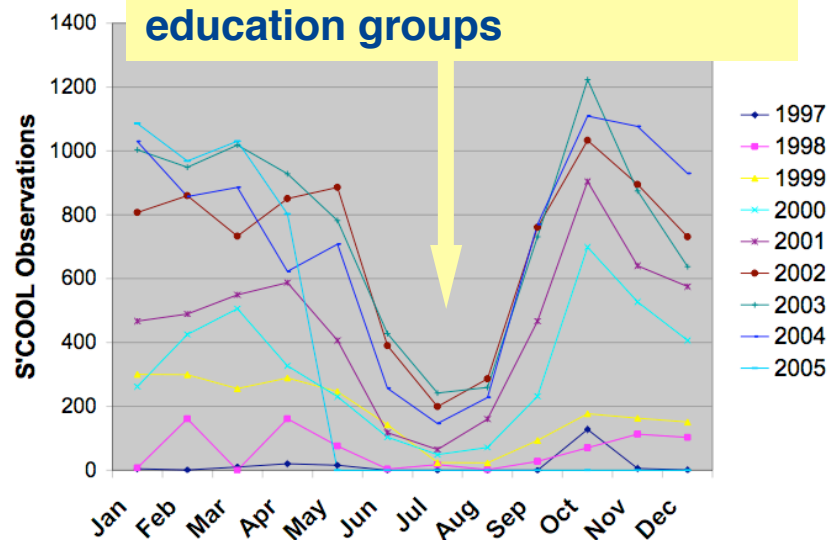
- > 42,000 observations
- >1900 registered participants

38% have submitted data

- 65 countries
data from 48 (74%)

Opportunity!









“summer schools”, year-round schools, and informal science education groups

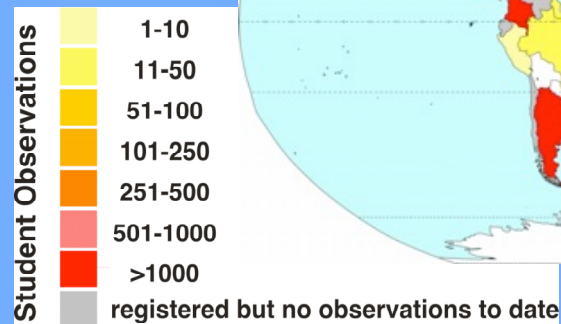


S'COOL Data

- A unique dataset matched to satellite
 - 15 minute temporal match
 - 1 degree spatial match
 - now working on closer spatial match (SSF)
- More than 15,500 correspondences available*
- Most recent: July 10, 2004
- Data available via the Internet for analysis:

School Name	Latitude	Longitude	City	State	Country
Greensboro Day School	36.20	-79.80	Greensboro	NC	USA

Surface Information				Satellite Information 239965				
Date: 2002-10-10		Universal Time: 15:54		Date: 2002-10-10		Universal Time: 15:53		
Satellite: Terra				Satellite: Terra				
Opacity	Cloud Cover	Type	Visualization		Altitude	Opacity	Cloud Cover	Phase Temp (K)
								
Opaque	(95% to 100%)	Altostratus			7.40	Opaque 28.40	(95% to 100%) 100.00	mixed 253.40
Opaque	(5% to 50%)	Stratus						
								
Persistent Contrails: 00		Short-Lived Contrails: 00						
Surface Observations:	Snow/Ice: No Standing Water: No Muddy: No Dry Ground: Yes Leaves on Trees: Yes							
Temperature: 19.00 C								
Barometric Pressure: 1024.00 hPa								
Relative Humidity: 35.00 %								
Comments: submitted by Matthew Fore and Mr. Martin.								



*2439 at one site!

asd-www.larc.nasa.gov/SCOOOL/usedata.html

S'COOL Presentations Since November 2004

- **7 Regional, state, or national conferences** (NSTA, NCTM, PSTC, SAS, USTA, FLAVA)
 - Utah finally submitted obs - the last state to do so!
- **Invited to participate in NOAA-sponsored Conference on Teacher Research Experiences** (University of Rhode Island, April 2005)
- **5 Presentations to student groups** (classroom visits, after-school groups, CHROME)
- **1 Videoconference using NASA Digital Learning Network** (connected to 3 SC teacher groups)
- **Presentations by NASA ERC Network** (>20 registered in MS after workshop at Stennis)



Publications

First paper using S'COOL data by someone outside the S'COOL team!

Shiffman, S., “Cloud Detection from Satellite Imagery: A Comparison of Expert-Generated and Automatically-Generated Decision Trees”, Eighth Workshop on Mining Scientific and Engineering Datasets, Newport Beach, CA, April 2005.



Celebrating a Century of Flight



basic physics at the undergrad level. Choose a school excellent for both teaching and research. Get training in Earth science particulars.

S'COOL in the Field

- **Teacher Ambassador presentations:**
 - Georgia Science Teachers Association
 - Regional Gifted Ed conference in Georgia
- **Nicaragua: Student-initiated effort now reaching all grade levels**



Elementary

Middle School



High School



Francesca



S'COOL Publicity

- **NASA Portal** feature article about S'COOL teacher ambassadors
- **NASA Portal** feature article about the Pennsylvania S'COOL with the most CERES correspondences
- **NASA Portal** feature on the April 2005 Sky Awareness Week Intensive Observation Period.
- **S'COOL Breeze Newsletter sent March 2005**
 - English (1607)
 - French (53)
 - Spanish (210)
- **Earth Science Week 2005** - working on getting S'COOL materials included in packets



Recognition for S'COOL



- S'COOL cloud type Tutorial requested by WGBH Boston for a new teacher website
- Tutorial also featured in DLESE
<http://asd-www.larc.nasa.gov/SCOOOL/tutorial>

- S'COOL lesson plan (Introducing Temperature Measurement, K-2) also recognized in DLESE
www.dlese.org
- S'COOL Team received One NASA Peer Award!



What's New at NASA?

- **Strategic Communication effort:**
 - All S'COOL materials must be redesigned
 - All materials subject to 3-level, 3-stage review
 - Materials also subject to education review
 - (Applies to materials you develop with NASA funding as well)
- **Funding:**
 - S'COOL Proposal to Earth Explorers NRA nixed
 - Hopes are now pinned on Terra Senior Review

S'COOL Needs YOU!

- **Participants in every state and 65 countries**
 - Offer to serve as a **resource to a local teacher**
 - Arrange a **S'COOL visit** when traveling
 - Provide **S'COOL info** to teachers you know
- **Presentation materials available**, with script suggestions
- **Help with translation of materials** (especially German and Italian)
- **Serve as resource for scientific content questions sent in by participants**